

# PATENT ABSTRACTS OF JAPAN

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(22)Date of filing : <b>03.04.1996</b>	(72)Inventor : <b>TAKAHASHI TOSHIO</b>

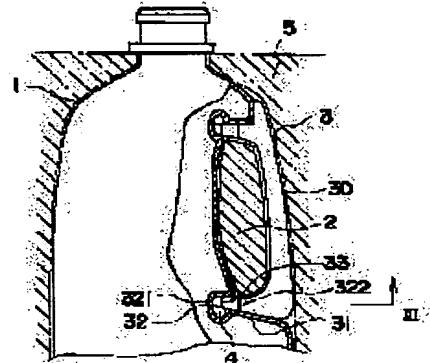
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## (54) PLASTIC BOTTLE WITH HANDLE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a plastic bottle with a handle which has stable mounting strength even in a bad condition such as a slippery liquid entering a mounting part.

**SOLUTION:** A recessed part 2 for handle mounting is provided on the side of a bottle main body 1. A separate handle 3 comprising a grip part 30 and an upper and a lower mounting arms 31 is mounted in the recessed part 2 for handle mounting by burying a catch part 32 at the end of the mounting arm 31 in the wall face of the recessed part 2 for handle mounting. The catch part 32, from its front face 321 to both of its sides 322, is curve surfaced in shape, and a notch 33 is formed in both of the sides 322 for the wall face of the recessed part 2 for handle mounting to encroach in the notch 33.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The handle of another object which forms the crevice for bundle net income attachment in the side face of the body of a bottle, and becomes this crevice for bundle net income attachment from the anchoring arm of the grip section and its upper and lower sides While it comes to attach it as the stop section at said head of an anchoring arm is embedded on the crevice wall surface for bundle net income attachment, and applying to a both-sides side from the front face of said stop section and considering as a curved-surface configuration The bundle deposit plastics bottle characterized by having formed notching in said both-sides side, and making the crevice wall surface for bundle net income attachment eat away in this notching.

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]**

[0001]

[Field of the Invention] It is related with the bundle deposit plastics bottle which formed the crevice for bundle net income attachment in the side face of the body of a bottle, and formed the handle in this crevice for bundle net income attachment.

[0002]

[Description of the Prior Art] The conventional bundle deposit plastics bottle forms the crevice 2 for bundle net income attachment in the side face of the body 1 of a bottle at drawing 4, as shown in a side elevation. Although what attached in this crevice 2 for bundle net income attachment the handle 3 of another object which consists of an anchoring arm 31 of the grip section 30 and its upper and lower sides as embedded the stop section 32 at said head of an anchoring arm on crevice 2 wall surface for bundle net income attachment is carried out When the liquid with the slippage of household detergent etc. infiltrated into the installation part, the problem that installation reinforcement fell arose.

[0003] This invention makes it a technical problem to offer the bundle deposit plastics bottle holding the installation reinforcement which was stable under the ill condition of infiltrating into an installation part.

[0004]

[Means for Solving the Problem] The handle of another object which the summary of this invention forms the crevice for bundle net income attachment in the side face of the body of a bottle, and becomes this crevice for bundle net income attachment from the anchoring arm of the grip section and its upper and lower sides While it comes to attach it as the stop section at said head of an anchoring arm is embedded on the crevice wall surface for bundle net income attachment, and applying to a both-sides side from the front face of said stop section and considering as a curved-surface configuration It is the bundle deposit plastics bottle characterized by having formed notching in said both-sides side, and making the crevice wall surface for bundle net income attachment eat away in this notching..

[0005]

[Embodiment of the Invention] Hereafter, this invention is explained based on a drawing. For the partial [ which shows an example of the bundle deposit plastics bottle of this invention ] side elevation which cut in part and was lacked, and drawing 2 , the perspective view showing the handle in drawing 1 and drawing 3 are [ drawing 1 ] III-III in drawing 1 . It is a fragmentary sectional view and drawing 4 is the side elevation showing the example of the conventional bundle deposit plastics bottle which cut in part and was lacked.

[0006] This invention forms the crevice 2 for bundle net income attachment in the side face of the body 1 of a bottle as it is shown in drawing 1 - drawing 3 . The handle 3 of another object which becomes this crevice 2 for bundle net income attachment from the anchoring arm 31 of the grip section 30 and its upper and lower sides While it comes to attach it as the stop section 32 at said head of an anchoring arm is embedded on crevice 2 wall surface for bundle net income attachment, and applying to the both-sides side 322 from the front face 321 of said stop section and considering as a curved-surface configuration It is the bundle deposit plastics bottle characterized by having formed notching 33 in said both-sides side 322, and making crevice 2 wall surface for bundle net income attachment eat away in this notching 33.

[0007] It is the biaxial-stretching-blow-molding bottle which consists of plastics represented by polyester resin, such as polyethylene terephthalate, as a body 1 of a bottle, and that by which the crevice 2 for bundle net income attachment was formed in the side face etc. can be used.

[0008] The injection-molded product which consists of the same polyester resin as the body of a bottle besides polypropylene or polyethylene as a handle 3 can be used.

[0009] As shown in drawing 1, a handle 3 consists of an anchoring arm 31 which projected in the longitudinal direction from the vertical ends of the grip section 30 and its grip section 30, is making horseshoe-shaped as a whole, and the head of the anchoring arm 31 serves as the stop section 32, and it provides in this stop section 32 the upper part or the stop projection 4 which starts caudad.

[0010] In order to attach a handle 3 in the crevice 2 for bundle net income attachment, it has stopped, as the stop section 32 at the head of an anchoring arm is embedded on crevice 2 wall surface for bundle net income attachment, and the stop projection 4 is wrapped in by crevice 2 wall surface for bundle net income attachment.

[0011] As this invention is shown in drawing 2 and drawing 3, while applying to the both-sides side 322 from the front face 321 of said stop section 32 and considering as a curved-surface configuration, it is characterized by having formed notching 33 in said both-sides side 322, and making crevice 2 wall surface for bundle net income attachment eat away in this notching 33.

[0012] There is no possibility that a wall surface may be torn during shaping without concentrating on one point, since it applies to the both-sides side 322 from a front face 321, a curved-surface configuration distributes and the stress added to crevice 2 wall surface for bundle net income attachment by applying to the both-sides side 322 from the front face 321 of the stop section 32, and considering as a curved-surface configuration is transmitted.

[0013] The curved-surface configuration which lasts to the both-sides side 322 from a front face 321 By having formed notching 33 in the both-sides side 322, and having made crevice 2 wall surface for bundle net income attachment eat away in this notching 33, if the radius of curvature of a horizontal section sets to about 2-4mm, while stress distributed That the stop section 32 tends to separate from crevice 2 wall surface for bundle net income attachment with the stress GH which joins a level hand of cut as shown in drawing 3 It can prevent effectively according to this interlocking structure, and the installation reinforcement which was stable with the ill condition of infiltrating into an installation part is held.

[0014] Since it is hard to rotate with the stress GH which joins a level hand of cut, the curved-surface configuration which lasts to the both-sides side 322 from said front face 321 is desirable while stress will distribute, if the radius of curvature of a horizontal section sets to about 2-4mm.

[0015] Moreover, if the front end of notching 33 is located in the both-sides side 322 which retreated 3-4mm from front 321 head, since it is easy to make crevice 2 wall surface for bundle net income attachment eat away, it is desirable.

[0016] If the anchoring arm 31 is made into the letter of head amplification in which width of face spreads as it goes at a head, the touch area to the body 1 of a bottle of the stop section 32 becomes large, and cannot produce shakiness etc. easily.

[0017] In order to manufacture the bundle deposit plastics bottle of this invention As shown in drawing 1, the handle 3 of another object beforehand manufactured with injection molding to the die 5 for fabricating the body 1 of a bottle Generally heat at 95-115 degrees C, and blow molding of the fluid is blown and carried out within said die 5. the stop section 32 projects in die 5 inner surface -- as -- setting -- for example, preforming made from polyethylene terephthalate -- molding temperature -- While crevice 2 wall surface for bundle net income attachment wraps in from a front face 321 with progress of shaping, applying [ of a handle 3 / anchoring arm 31 ] it to the both-sides side 322 at the same time it forms the body 1 of a bottle The stop projection 4 is wrapped in and it eats away in the notching 33 further formed in the both-sides side 322, and as the stop section 32 is embedded on crevice 2 wall surface for bundle net income attachment, it can be attached.

[0018]

[Effect of the Invention] The handle of another object which this invention forms the crevice for bundle net income attachment in the side face of the body of a bottle, and becomes this crevice for bundle net income attachment from the anchoring arm of the grip section and its upper and lower sides While it comes to attach it as the stop section at said head of an anchoring arm is embedded on the crevice wall surface for bundle net income attachment, and applying to a both-sides side from the front face of said stop section and considering as a curved-surface configuration Since it is the bundle deposit plastics bottle characterized by having formed notching in said both-sides side, and making the crevice wall surface for bundle net income attachment eat away in this notching While there is no possibility that a wall surface may be torn during shaping without the stress added to the crevice wall surface for bundle net income attachment concentrating on one point It can prevent effectively that the stop section tends to separate from the crevice wall surface for bundle net income attachment with the stress which joins a level hand of cut, and the installation reinforcement which was stable under the ill condition of infiltrating into an installation part can be held.

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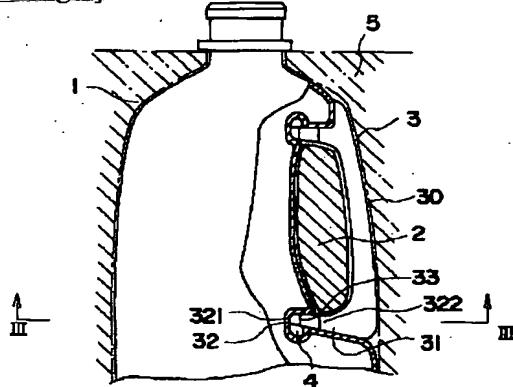
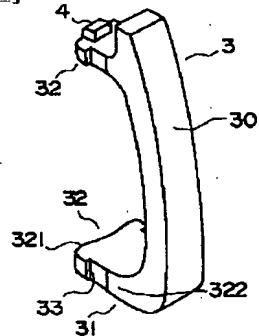
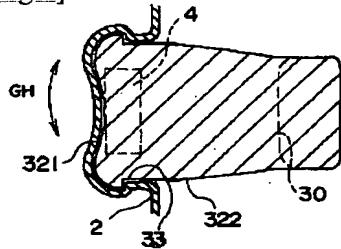
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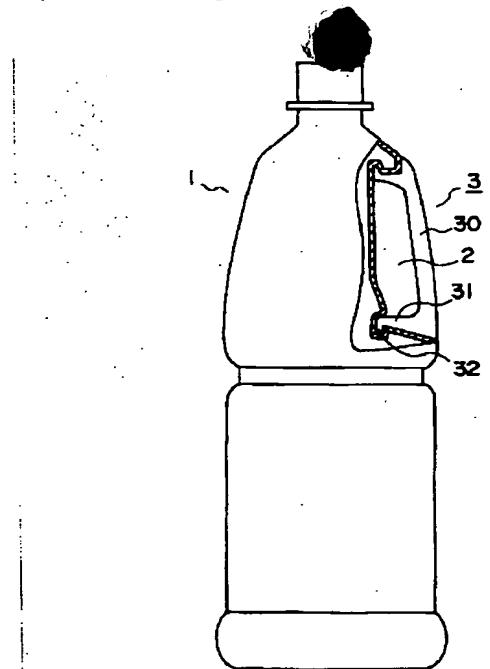
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**DRAWINGS**

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**[Drawing 1]****[Drawing 2]****[Drawing 3]****[Drawing 4]**



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[Translation done.]

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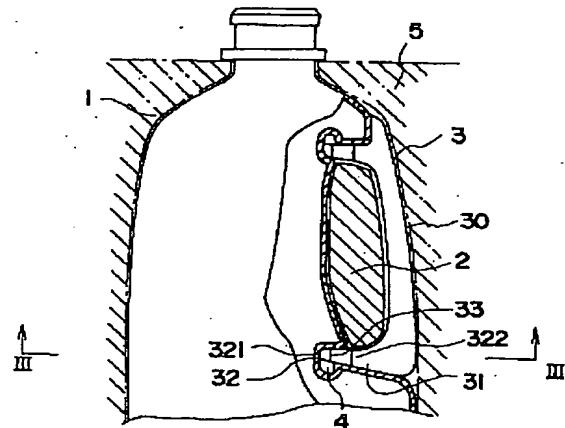
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## (54) 【発明の名称】把手付プラスチックボトル

## (57) 【要約】

【課題】 滑性のある液体が取り付け部分に浸入するなどの悪条件下においても安定した取り付け強度を保持する把手付プラスチックボトルを提供する。

【解決手段】 ボトル本体1の側面に把手取付け用凹部2を形成し、該把手取付け用凹部2に握り部30とその上下の取付け腕31からなる別体の把手3を、前記取付け腕先端の係止部32を把手取付け用凹部2壁面に埋め込むようにして取り付けてなり、前記係止部の前面321から両側面322にかけて曲面形状とともに、前記両側面322に切り欠き33を形成してこの切り欠き33内に把手取付け用凹部2壁面を食い込ませたことを特徴とする把手付プラスチックボトル。



## 【特許請求の範囲】

【請求項1】 ボトル本体の側面に把手取付け用凹部を形成し、該把手取付け用凹部に握り部とその上下の取付け腕からなる別体の把手を、前記取付け腕先端の係止部を把手取付け用凹部壁面に埋め込むようにして取り付けてなり、前記係止部の前面から両側面にかけて曲面形状とするとともに、前記両側面に切り欠きを形成してこの切り欠き内に把手取付け用凹部壁面を食い込ませたことを特徴とする把手付プラスチックボトル。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 ボトル本体の側面に把手取付け用凹部を形成し、該把手取付け用凹部に把手を形成した把手付プラスチックボトルに関する。

## 【0002】

【従来の技術および発明が解決しようとする課題】 従来の把手付プラスチックボトルは、図4に側面図で示すように、ボトル本体1の側面に把手取付け用凹部2を形成し、該把手取付け用凹部2に握り部30とその上下の取付け腕31からなる別体の把手3を、前記取付け腕先端の係止部32を把手取付け用凹部2壁面に埋め込むようにして取り付いたものが実施されているが、家庭用洗剤などの滑性のある液体が取り付け部分に浸入すると、取り付け強度が低下するという問題が生じた。

【0003】 本発明は、滑性のある液体が取り付け部分に浸入するなどの悪条件下においても安定した取り付け強度を保持する把手付プラスチックボトルを提供することを課題とする。

## 【0004】

【課題を解決するための手段】 本発明の要旨は、ボトル本体の側面に把手取付け用凹部を形成し、該把手取付け用凹部に握り部とその上下の取付け腕からなる別体の把手を、前記取付け腕先端の係止部を把手取付け用凹部壁面に埋め込むようにして取り付けてなり、前記係止部の前面から両側面にかけて曲面形状とするとともに、前記両側面に切り欠きを形成してこの切り欠き内に把手取付け用凹部壁面を食い込ませたことを特徴とする把手付プラスチックボトルである。

## 【0005】

【発明の実施の形態】 以下、本発明を図面にもとづいて説明する。図1は本発明の把手付プラスチックボトルの一例を示す一部切り欠いた部分側面図、図2は図1における把手を示す斜視図、図3は図1におけるIII-III部分断面図であり、図4は従来の把手付プラスチックボトルの例を示す一部切り欠いた側面図である。

【0006】 本発明は図1～図3に示す通り、ボトル本体1の側面に把手取付け用凹部2を形成し、該把手取付け用凹部2に握り部30とその上下の取付け腕31からなる別体の把手3を、前記取付け腕先端の係止部32を把手取付け用凹部2壁面に埋め込むようにして取り付け

てなり、前記係止部の前面321から両側面322にかけて曲面形状とするとともに、前記両側面322に切り欠き33を形成してこの切り欠き33内に把手取付け用凹部2壁面を食い込ませたことを特徴とする把手付プラスチックボトルである。

【0007】 ボトル本体1としては、ポリエチレンテレフタレート等のポリエステル樹脂に代表されるプラスチックからなる二軸延伸ブロー成形ボトルで、その側面などに把手取付け用凹部2が形成されたものが使用できる。

【0008】 把手3としては、ポリプロピレンやポリエチレンの他、ボトル本体と同様のポリエステル樹脂からなる射出成形品が使用できる。

【0009】 図1に示すように、把手3は、握り部30とその握り部30の上下両端から横方向に突出した取付け腕31とからなり、全体としてコの字状をなしており、取付け腕31の先端は係止部32となっており、該係止部32には上方あるいは下方に立ち上がる係止突起4を設けてある。

【0010】 把手取付け用凹部2に把手3を取り付けるためには、取付け腕先端の係止部32を把手取付け用凹部2壁面に埋め込むようにして、係止突起4を把手取付け用凹部2壁面によって包み込むようにして係止してある。

【0011】 本発明においては図2、図3に示すように、前記係止部32の前面321から両側面322にかけて曲面形状とするとともに、前記両側面322に切り欠き33を形成してこの切り欠き33内に把手取付け用凹部2壁面を食い込ませたことを特徴としている。

【0012】 係止部32の前面321から両側面322にかけて曲面形状とすることにより、把手取付け用凹部2壁面に対して加わる応力が、前面321から両側面322にかけて曲面形状に分散されて伝わるので、一点に集中することなく、成形中に壁面が破れたりする恐がない。

【0013】 前面321から両側面322にかけての曲面形状は、水平断面の曲率半径が2～4mm程度とすると、応力が分散するとともに両側面322に切り欠き33を形成してこの切り欠き33内に把手取付け用凹部2壁面を食い込ませたことにより、図3に示すように水平回転方向に加わる応力GHによって係止部32が把手取付け用凹部2壁面から外れようとするのを、この食い込み構造により有効に阻止することができ、滑性のある液体が取り付け部分に浸入するなどの悪条件によても安定した取り付け強度を保持する。

【0014】 前記前面321から両側面322にかけての曲面形状は、水平断面の曲率半径が2～4mm程度とすると、応力が分散するとともに、水平回転方向に加わる応力GHによって回転しにくいので好ましい。

【0015】 また、前面321先端から3～4mm後退

した両側面322に、切り欠き33の前端を位置させれば、把手取付け用凹部2壁面を食い込ませやすいので好ましい。

【0016】取付け腕31を先端にいくにつれて幅が広がる先端拡大状にしておけば、係止部32のボトル本体1への接触面積が大きくなり、がたつきなど生じにくくものである。

【0017】本発明の把手付プラスチックボトルを製造するためには、図1に示すように、ボトル本体1を成形するための成形型5に、あらかじめ射出成形により製造しておいた別体の把手3を、その係止部32が成形型5内面に突出するようにセットしておき、例えはポリエチレンテレフタレート製のプリフォームを成形温度、一般には95~115℃に加熱し、前記成形型5内で流体を吹き込んでブロー成形して、ボトル本体1を形成すると同時に、成形の進行に伴い把手取付け用凹部2壁面が把手3の取付け腕31先端を前面321から両側面322にかけて包み込むとともに、係止突起4を包み込み、さらに両側面322に形成した切り欠き33内に食い込んで、係止部32を把手取付け用凹部2壁面に埋め込むようにして取り付けることができる。

#### 【0018】

【発明の効果】本発明は、ボトル本体の側面に把手取付け用凹部を形成し、該把手取付け用凹部に握り部とその上下の取付け腕からなる別体の把手を、前記取付け腕先端の係止部を把手取付け用凹部壁面に埋め込むようにして取り付けてなり、前記係止部の前面から両側面にかけて

て曲面形状とともに、前記両側面に切り欠きを形成してこの切り欠き内に把手取付け用凹部壁面を食い込ませたことを特徴とする把手付プラスチックボトルであるから、把手取付け用凹部壁面に対して加わる応力が、一点に集中することなく、成形中に壁面が破れたりする恐れがないとともに、水平回転方向に加わる応力によつて係止部が把手取付け用凹部壁面から外れようとするのを有効に阻止することができ、滑性のある液体が取り付け部分に浸入するなどの悪条件下においても、安定した取り付け強度を保持することができる。

#### 【図面の簡単な説明】

【図1】本発明の把手付プラスチックボトルの一例を示す一部切り欠いた部分側面図

【図2】図1における把手を示す斜視図

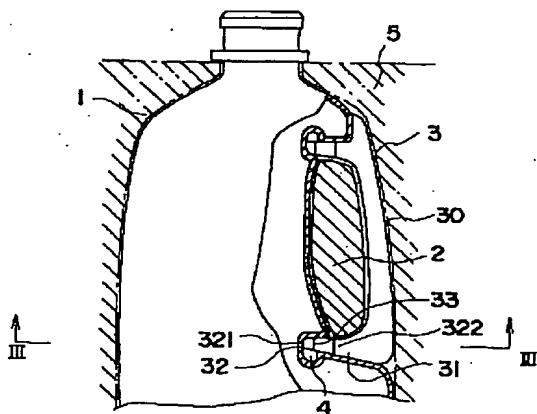
【図3】図1におけるIII-III部分断面図

【図4】従来の把手付プラスチックボトルの例を示す一部切り欠いた側面図

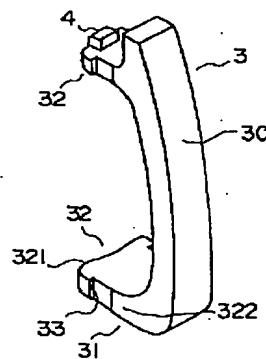
#### 【符号の説明】

1	ボトル本体
2	把手取付け用凹部
3	把手
30	握り部
31	取付け腕
32	係止部
321	係止部前面
322	係止部両側面
33	切り欠き

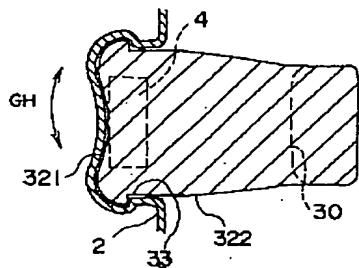
【図1】



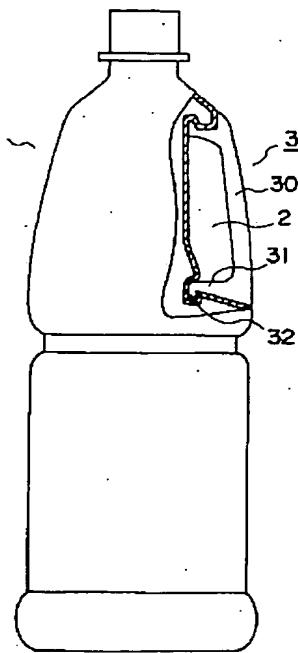
【図2】



【図3】



【図4】



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